MEDIA RELEASE

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A*STAR, One BioMed launch S$9m joint lab to make diagnostic kit for infectious diseases

SINGAPORE – A*STAR's Institute of Microelectronics (IME) and One BioMed, an A*STAR spin-off, launched a S$9 million joint lab on Thursday (29 November). The aim is to launch within the next five years, a point-of-care diagnostic kit that can test for up to 20 types of infectious diseases simultaneously in just 20 minutes.

Today, the spread of disease is accelerated by a lack of access to accurate data in real time. Early infectious disease detection using molecular diagnostics has held the promise of accuracy, but until now has been limited in both speed and cost. One BioMed is developing a portable point-of-care diagnostic system, where doctors and patients will no longer have to wait for days for samples to be sent to a central laboratory for tests. Furthermore, the team has reduced costs substantially such that they are comparable to that of the conventional central laboratory approach, making it an affordable option for both clinics and hospitals, where clinicians are demanding ready access to diagnose their patients.

Located in one-north, the new 1,500-square-foot dedicated joint-lab facility, to be fully operational by March 2019, will see pilot production of the automated diagnostic kit, using IME's lab-on-a-chip technology and One BioMed's silicon biophotonics and solid-phase nucleic acid purification platform technologies, originally developed at IME.

IME's lab-on-a-chip technology compresses multiple steps in testing – that traditionally had to be conducted using a range of laboratory equipment – into a single step process, housed within a chip or cartridge that is smaller than a smartphone. One BioMed combined capabilities across the three diverse disciplines of semiconductor silicon photonics, chemistry and biology to give the kit both the sensitivity needed for accurate detection and speed.

The new joint lab is One BioMed's second with A*STAR. The first was launched in January 2017 in collaboration with A*STAR's Genome Institute of Singapore (GIS) to develop molecular diagnostic assays for the Asian clinical infectious disease testing market.

Since it was established, One BioMed has secured S$1.75 million in funding, in addition to the S$7.5 million invested in the technology development, and has continued to work closely with A*STAR on its path towards commercialisation.

"Innovation is a must in an age where businesses are being disrupted and redefined. IME's joint lab initiative with One BioMed is an example of how A*STAR helps nurture innovative local enterprises to drive economic growth. We are delighted to take one step forward to improve medical diagnostics in healthcare." said Prof Dim-Lee Kwong, Covering Executive Director, IME.

"As we complete the development of our first product, One BioMed's needs are shifting to commercialisation. IME is an ideal launchpad for that effort with their expertise, depth of talent and available resources. We are grateful for A*STAR's continued commitment to fostering an ecosystem for not only early stage R&D, but also advanced stage product development." said Dr Mi Kyoung Park, Founder and Chief Executive Officer, One BioMed.

For media queries and clarifications, please contact:

Ms Elizabeth Han
Senior Officer, Corporate Communications
Agency for Science, Technology and Research (A*STAR)
Mobile: +65 9759 2284
Tel: +65 6517 7940
Email: elizabeth_han@hq.a-star.edu.sg

Dr Mi Kyoung Park
Chief Executive Officer
One BioMed Pte. Ltd.
Tel: +65 9850 1061
Email: mkpark@onebiomed.com

About A*STAR's Institute of Microelectronics (IME)

The Institute of Microelectronics (IME) is a research institute of the Science and Engineering Research Council of the Agency for Science, Technology and Research (A*STAR). Positioned to bridge the R&D between academia and industry, IME's mission is to add value to Singapore's semiconductor industry by developing strategic competencies, innovative technologies and intellectual property; enabling enterprises to be technologically competitive; and cultivating a technology talent pool to inject new knowledge to the industry. Its key research areas are in integrated circuits design, advanced packaging, bioelectronics and medical devices, MEMS, nanoelectronics, and photonics.

For more information on IME, please visit www.ime.a-star.edu.sg.

About the Agency for Science, Technology and Research (A*STAR)

The Agency for Science, Technology and Research (A*STAR) is Singapore's lead public sector agency that spearheads economic oriented research to advance scientific discovery and develop innovative technology. Through open innovation, we collaborate with our partners in both the public and private sectors to benefit society.

As a Science and Technology Organisation, A*STAR bridges the gap between academia and industry. Our research creates economic growth and jobs for Singapore, and enhances lives by contributing to societal benefits such as improving outcomes in healthcare, urban living, and sustainability.

We play a key role in nurturing and developing a diversity of talent and leaders in our Agency and research entities, the wider research community and industry. A*STAR's R&D activities span biomedical sciences and physical sciences and engineering, with research entities primarily located in Biopolis and Fusionopolis.

For ongoing news, visit www.a-star.edu.sg.

About One BioMed Pte. Ltd.

One BioMed, an A*STAR spin-off, is an early-stage startup in Singapore with two cutting-edge, digital-health, molecular diagnostics (MDx) platform technologies: a simple, but state-of-the-art, DNA/RNA extraction system & silicon photonics-based sensing. The technologies are poised to revolutionize precise, early infectious-disease detection at point-of-care (PoC). These technologies enable the simultaneous

detection of a library of both bacterial and viral infections within 20 min in a fully automated format at costs similar to a single MDx test in a central laboratory, giving physicians the tool to diagnose precisely a panel of diseases without having to guess, based solely on symptoms. The company's first product is an automated nucleic acid purification platform focused on the low-throughput research/clinical lab market. The PoC clinical testing platform focused on infectious diseases which disproportionately affect Asia, namely Pediatric Respiratory Disease and Tuberculosis, will follow.